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1. [illegible]

2. [illegible] ([illegible])

Letter to the Editor: [illegible] fruit trees [illegible], By Crimea Agricultural Institute Director [illegible].

Q. Soviet Source: Izv 2[illegible]/3—350

Qa. Current Digest of the Soviet Press ([redacted]), Vol, IV, No. 43, 1952, P. 32.

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SOL[illegible], V. I.

"Utilization of Virgin Soils for the Cultivation of Potatoes and Certain Vegetables." Sbor Nyr Sel, Crimean Agricultural Inst, Simferopol', 1953. (RZhBiol, No 1, Sep 54)

SO: Sum. 432, 24 Mar 55

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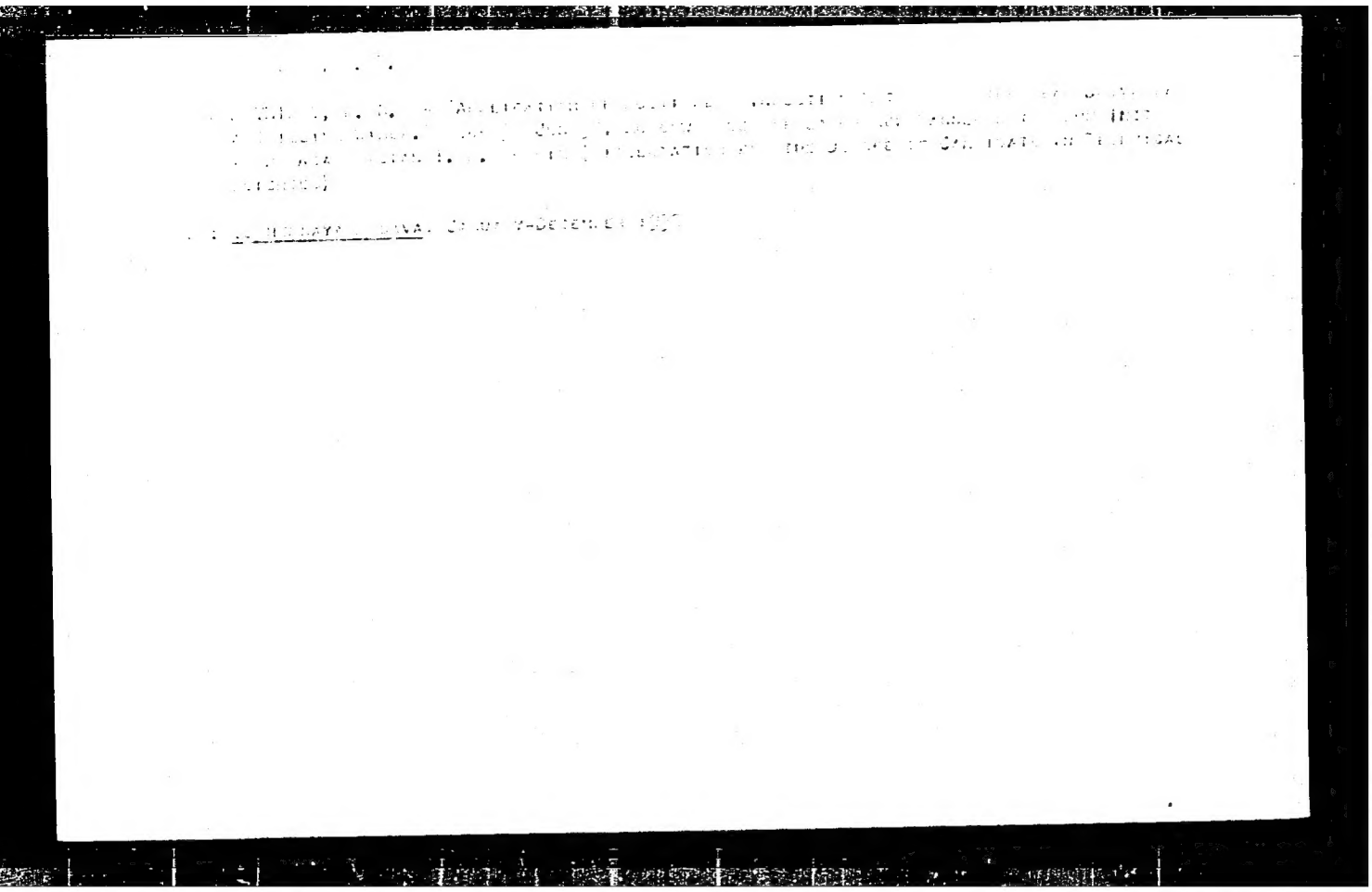

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, P.N., inzhener.

Critical slip of asynchronous motors. Vest.elektroprom. 27 no.11: 57-59 N '56. (MLRA 9:12)

1. Moskovskiy neftyanoy institut.
(Electric motors, Induction)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

AUTHOR: Golodovnikov, P.N., Candidate of Technical Sciences.

TITLE: Calculating the starting resistances of induction motors. (Raschet puskovykh soprotivleniy asinkhronnykh dvigateley.) 110-6-12/24

PERIODICAL: "Vestnik Elektropromyshlennosti" (Journal of the Electrical Industry)1957,Vol.28,No.6, pp.44 - 45 (U.S.S.R.)

ABSTRACT: In a previous article, the author gave a simple formula for the critical slip of an induction motor. He now gives a more accurate expression. From the critical slip and the standard performance data of the motor it is possible to construct a universal family of mechanical characteristics of an induction motor suitable for the calculation of starting and working resistances. The method by which this is done is explained and the chart of mechanical characteristics is given in Fig.1 which is attached at the end of the journal and not in the body of the text.

To calculate starting resistance by means of the universal family of characteristics it is necessary to determine the position on the characteristics of zero speed and maximum and minimum torque during starting.

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Calculating the starting resistances of induction motors. (Cont.) 110-6-12/24

A worked example is given. There is an error in the torque formula and Fig. 2 is a curve showing the general character of the torque error as a function of slip. At certain values of slip the error may be considerable but at the critical slip it is zero. It is shown that if the error in the resistance ratio is of the order of 0.2 the error in the torque is less than 1%.

There are 2 figures and 2 Slavic references.

ASSOCIATION: Moscow Petroleum Institute imeni Gubkin. (Moskovskiy Neftyanoy Institut imeni Gubkina)

SUBMITTED: February 8, 1957

AVAILABLE:

Card 2/2

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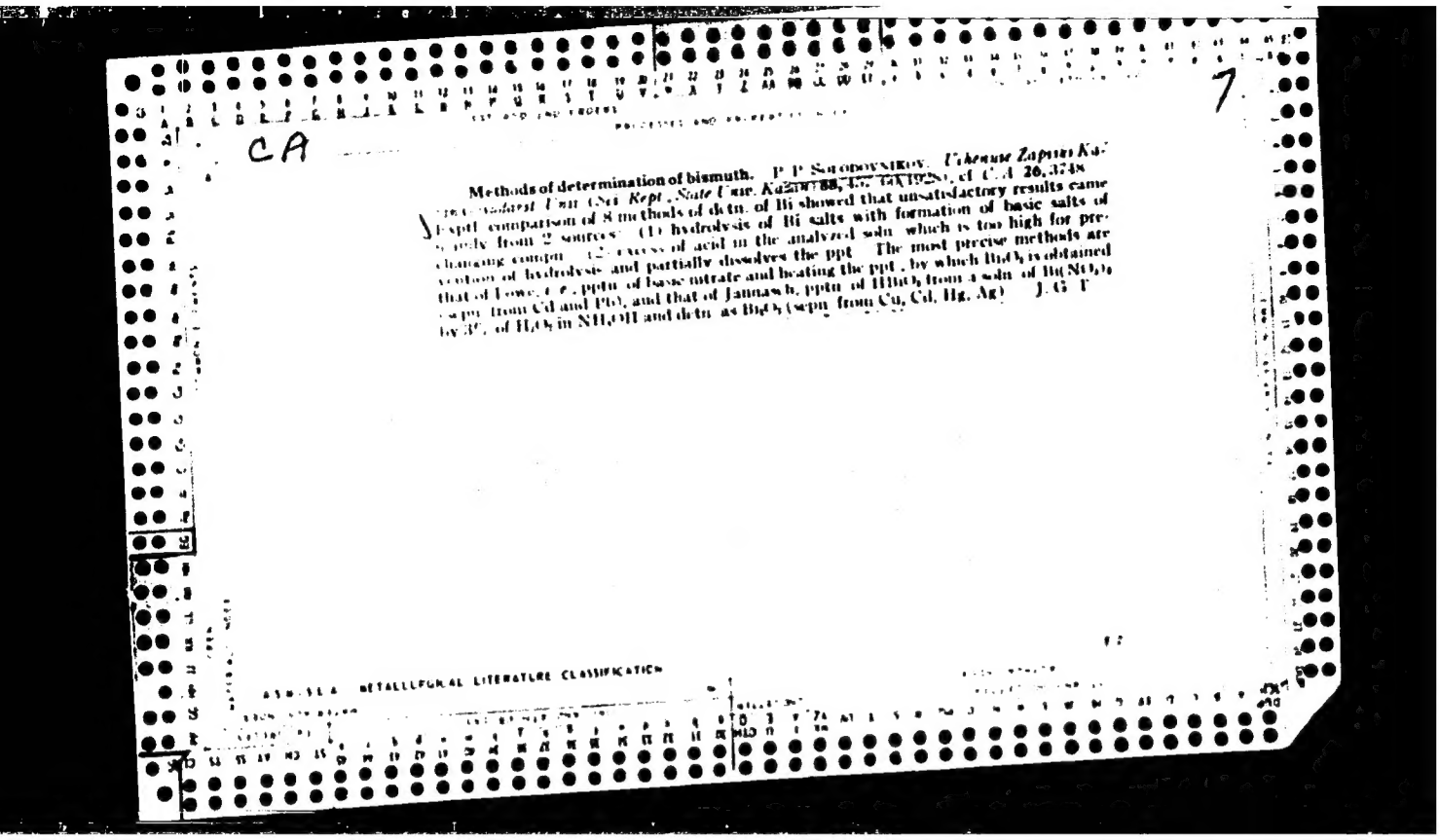

7

CA

Methods of determination of bismuth. P. P. Solodovnikov. *Uchenye Zapiski Ka-* [illegible] *Sudarst. Univ. (Sci. Rept., State Univ. Kazan)* 88, [illegible] (1928), cf. C.A. 26, 3748. Exptl. comparison of 8 methods of detn. of Bi showed that unsatisfactory results came [illegible] from 2 sources: (1) hydrolysis of Bi salts with formation of basic salts of changing compn.; (2) excess of acid in the analyzed soln. which is too high for prevention of hydrolysis and partially dissolves the ppt. The most precise methods are that of Lowe, i.e., pptn. of basic nitrate and heating the ppt., by which Bi_2O_3 is obtained (sepn. from Cd and Pb), and that of Jannasch, pptn. of $HBiO_3$ from a soln. of $Bi(NO_3)_3$ by 3% of H_2O_2 in NH_4OH and detn. as Bi_2O_3 (sepn. from Cu, Cd, Hg, Ag). J. G. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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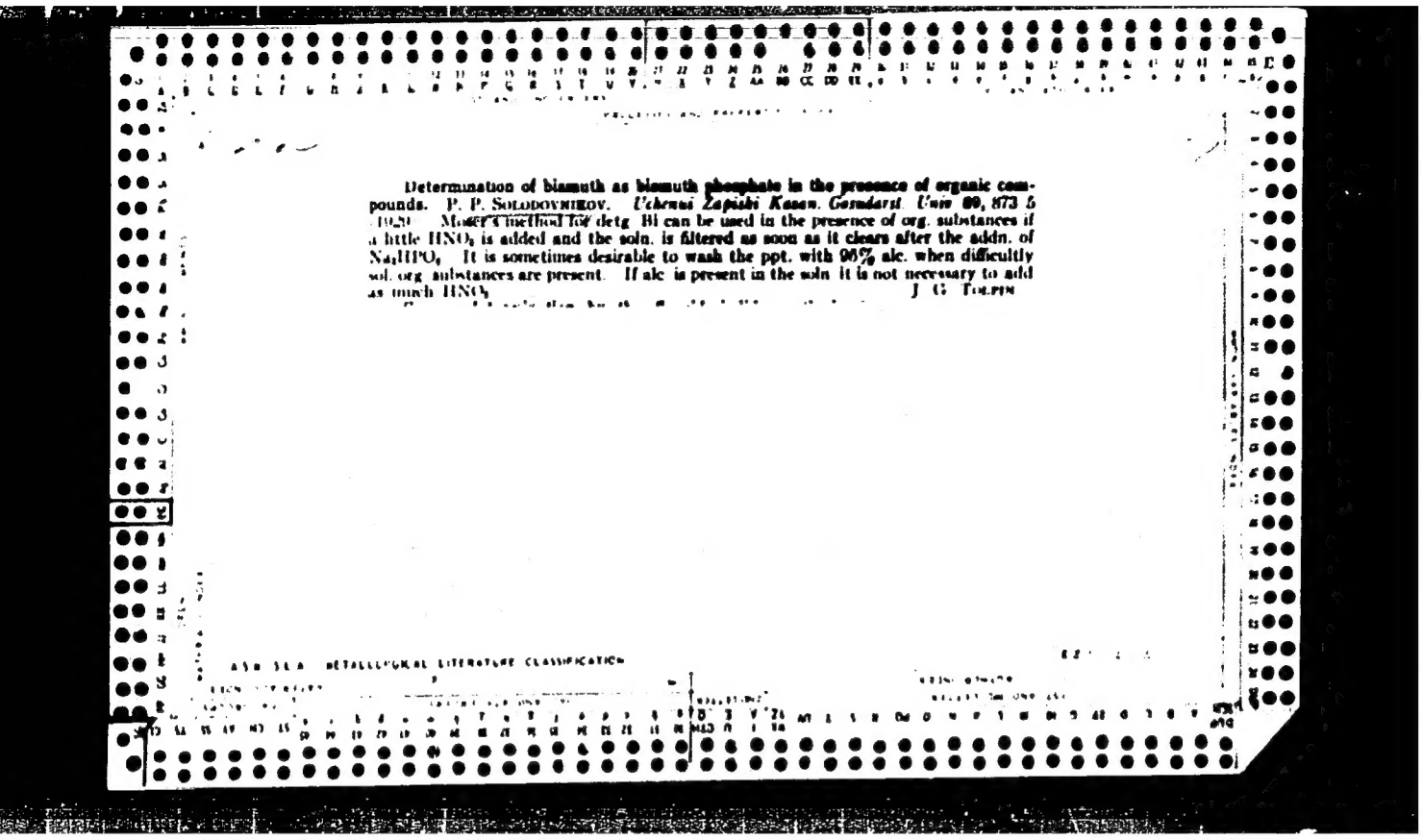

Determination of bismuth as bismuth phosphate in the presence of organic compounds. P. P. Solodovnikov. *Uchenni Zapiski Kazan. Gosudarst. Univ.* **80**, 873 5 (1920). Mohr's method for detg. Bi can be used in the presence of org. substances if a little HNO_3 is added and the soln. is filtered as soon as it clears after the addn. of Na_2HPO_4. It is sometimes desirable to wash the ppt. with 96% alc. when difficultly sol. org. substances are present. If alc. is present in the soln. it is not necessary to add as much HNO_3. J. G. Tolpin

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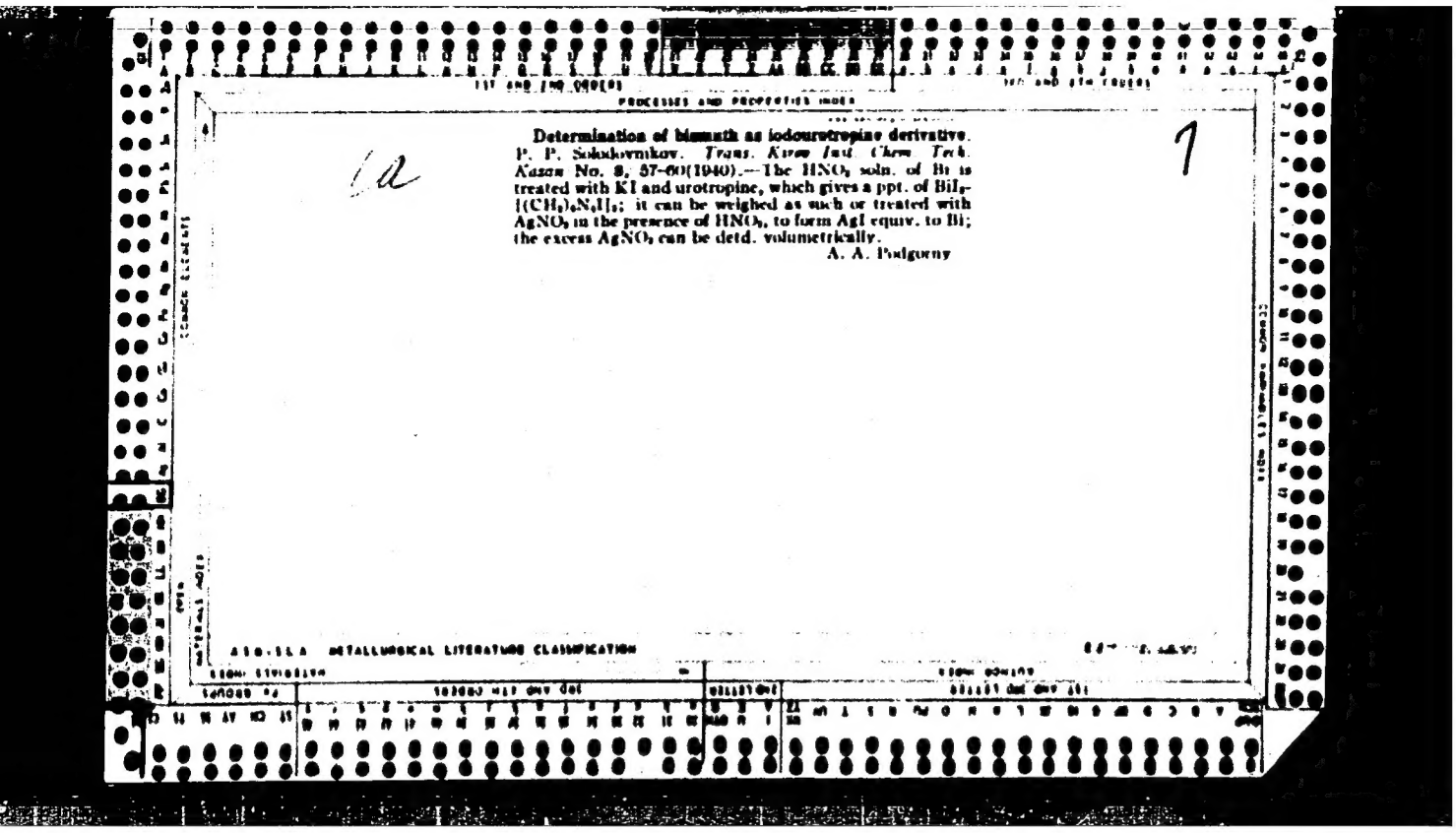
1ST AND 2ND ORDERS



PROCESSES AND PROPERTIES INDEX

1a

1

Determination of bismuth as iodourotropine derivative. P. P. Solodovnikov. *Trans. Kirov Inst. Chem. Tech. Kazan* No. 8, 57-60(1940).—The HNO_3 soln. of Bi is treated with KI and urotropine, which gives a ppt. of $BiI_2[(CH_2)_6N_4I]_2$; it can be weighed as such or treated with $AgNO_3$ in the presence of HNO_3, to form AgI equiv. to Bi; the excess $AgNO_3$ can be detd. volumetrically.

A. A. Podgorny

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, P.P.

Methods for determining bismuth as an oxyhalogen compound.
Trudy KKHTI no.13:74-77 '48. (MIRA 12:12)

1.Kazanskiy khimiko-tekhnologicheskiy institut im. S.M. Kirova, kafedra analiticheskoy khimii.
(Bismuth--Analysis)

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, P.P.

Acidimetric determination of the titer of sodium thiosulfate.
Trudy KKHTI no.14:96-98 '49. (MIRA 12:11)

1.Kafedra analiticheskoy khimii Kazanskogo khimiko-tekhnologicheskogo instituta im. S.M. Kirova.
(Sodium thiosulfate)

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, P.P.

Determining the iodine number of resins. Trudy KKHTI no.16:187-190 '51 [Publ. '52]. (MIRA 12:12)
(Resins, Synthetic--Analysis) (Iodometry)

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, P.P.

Quantitative determination of dextrin in zinc electrolyte baths. P. P. Solodovnikov. *Trudy Kazan. Khim.-Tekh-nol. Inst. im. S. M. Kirova* 1954–55, No. 19–20, 205–8.—Dextrin was detd. in the following electrolytes: (1) $ZnSO_4 \cdot 7H_2O$ 215, $Na_2SO_4 \cdot 10H_2O$ 30, $Al_2(SO_4)_3 \cdot 18H_2O$ 30, NaCl 5, and dextrin 10 g./l., pH 3.5–4.0 and (2) $ZnSO_4 \cdot 7H_2O$ 200–300, $Na_2SO_4 \cdot 10H_2O$ 60–100, H_3BO_3 25–30, dextrin 10–12 g./l., pH 3.5–5.00. A 5-ml. sample was dild. with water to 100 cc. and the dextrin hydrolyzed with 10 cc. HCl (d. 1.25) by simmering it for 3 hrs.; then Zn hydroxide was pptd. with caustic (with phenolphthalein), filtered off, and the glucose formed was detd. by the Bertrand method.

Alexis N. Pestoff

Chem 4647

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, P.P.

Quantitative determination of dextrin in zinc electrolytic baths. (MLRA 10:5)
Trudy KAI 31:127-132 '56.
(Dextrin) (Zinc plating)

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOV/81-59-16-57471

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 16, pp 265-266 (USSR)

AUTHOR: Solodovnikov, P.P.

TITLE: The Determination of Lead Dioxide in the Electrochemical Corrosion Products of Lead Cables

PERIODICAL: Tr. Kazansk. aviats. in-ta, 1958, pp 33-34, 91-94

ABSTRACT: Corrosion (C) of Pb-wrappings of underground cables can take place under the action of erratic currents as well as due to electrochemical or chemical C. One of these causes can be established on the basis of detection of PbO_2 in the C products. For this purpose a method has been developed for the determination of PbO_2 which is based on the oxidation action of the latter on HCl (gas) with the subsequent detection of the separated Cl_2 by means of moist iodine-starch paper. The proposed method is distinguished by a sufficient sensitivity of $1.5 \cdot 10^{-4}$ g. The presence of nitrates and nitrites distorts the results. For their elimination the preliminary washing of the sample by hot water is recommended.

V. Pritula.

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SOLODOVNIKOV, P.P.

Direct fluorometric determination of aluminum with the aid of hematoxylin. Zhur.anal.khim. 16 no.2:237-240 Mr-Ap '61. (MIRA 14:5)

1. Kazan Aviation Institute.
(Aluminum--Analysis)

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, P.P.

Violuric acid as an indicator in complexonometric titration of copper. Zhur.anal.khim. 18 no.8:1026-1027 Ag '63. (MIRA 16:12)

1. Kazan Aviation Institute.

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, F.V.

"Transverse Impace Against a Pigid String." Thesis for degree of Cand. Physico-Mathematical Sci. Sub 29 Jun 50, Sci Res. Inst. of Mechanics, Moscow State U imeni M. V. Lomonosov.

Summary 71, 4 Sep 52, Dissertations Presented for Degrees in Science and Engineering in Moscow in 1940. From Vechernyaya Moskva, Jan-Dec. 1950

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

Solodovnikov, R. V.

3

396. Solodovnikov, R. V., Transverse impact on an infinite stretched bar (in Russian), *Trudi Khar'kovsk. inzh.-stroit. in-ta*, no. 4, 263–268, 1955; *Ref. Zh. Mekh.* 1956, Rev. 6196.

The small elastic oscillations of the preliminarily stretched homogeneous bar are described by the linear differential equation

$$\frac{\partial^2 v}{\partial t^2} = a^2 \left(\frac{\partial^2 y}{\partial x^2}\right) - b^2 \left(\frac{\partial^4 v}{\partial x^4}\right)$$

where a and b are constants, y deflection, x coordinates, t time.

The starting and boundary conditions correspond to the transverse impact of the load of the end mass with the given velocity of the quiescent bar.

N. F. Lebedev, USSR

Courtesy Referativnyi Zhurnal
Translation, courtesy Ministry of Supply, England

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

KAPLAN, Il'ya Abramovich; SOLODOVNIKOV, R.V., dots., otv. red.; BAZILYANSKAYA, I.L., red.

[Practical studies in higher mathematics] Prakticheskie zaniatiia po vysshei matematike. Khar'kov, Izd-vo Khar'kovskogo gos. univ. im. A.M.Gor'kogo. Pt.2. [Differential calculus of functions of one variable and several variables] Differentsial'noe ischislenie funktsii odnoi i mnogikh nezavisimykh peremennykh. 1963. 369 p. (MIRA 17:4)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

KAPLAN, Il'ya Abramovich; JAZHENOV, G.M., doktor fiz.-matem. nauk, prof., retsenzent; GORDEYEVSKIY, D.Z., dots., otv. red.; SOLODOVNIKOV, R.V., dots., otv. red.; BAZILYANSKAYA, I.L., red.

[Practical studies in higher mathematics; analytical geometry, plane and solid; differential calculus of functions of one and several independent variables] Prakticheskie zaniatiia po vysshei matematike; analiticheskaia geometriia na ploskosti i v prostranstve, differentsial'noe ischislenie funktsii odnoi i mnogikh nezavisimykh peremennykh. Izd.2., dop. i perer. Khar'kov, Izd-vo Khar'kovskogo univ., 1965. 574 p. (MIRA 18:3)

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLOVYNIKOV, [illegible], inzh.

Adjustment of rail-welding machines. Put' i put.khoz. 8 no.12:36-38 '64. (MIRA 18:1)

1. Institut elektrosvarki im. Ye.O.Patona, Kiyev.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, S.A.; GOLOMOVZYUK, I.K.; MYAKUSHKO, I.T.

Welding railroad rails in the track with a mobile rail welding machine. Avtom. svar. 17 no.4:63-66 Ap '64 (MIRA 18:1)

1. Institut elektrosvarki imeni Ye.O. Patona AN UkrSSR (for Solodovnikov, Golomovzyuk). 2. Darnitskaya distantsiya puti Yugo-Zapadnoy zheleznoy dorogi (for Myakushko).

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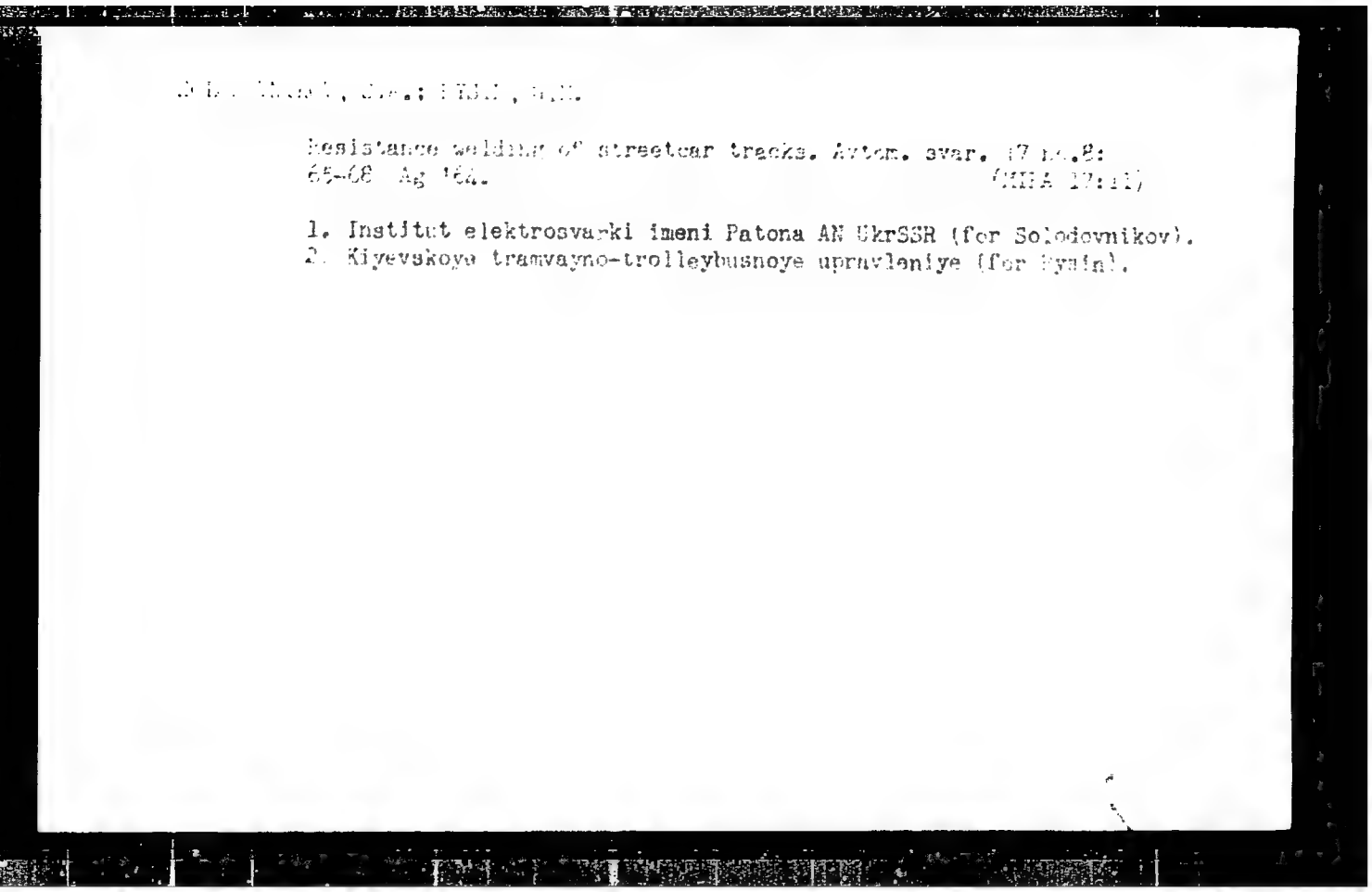

[illegible], Engr.; [illegible], A.M.

Resistance welding of streetcar tracks. Avtom. svar. 17 no.8:
65-68 Ag '64. (MIRA 17:11)

1. Institut elektrosvarki imeni Patona AN UkrSSR (for Solodovnikov).
2. Kiyevskoye tramvayno-trolleybusnoye upravleniye (for Ryain).

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, S.A., inzh.

Tuning of the command system of rail welding machines. Put' i put.khoz. 9 no.6:29-31 '65. (MIRA 18:6)

1. Institut elektrosvarki im. Ye.O.Paton, Kiyev.

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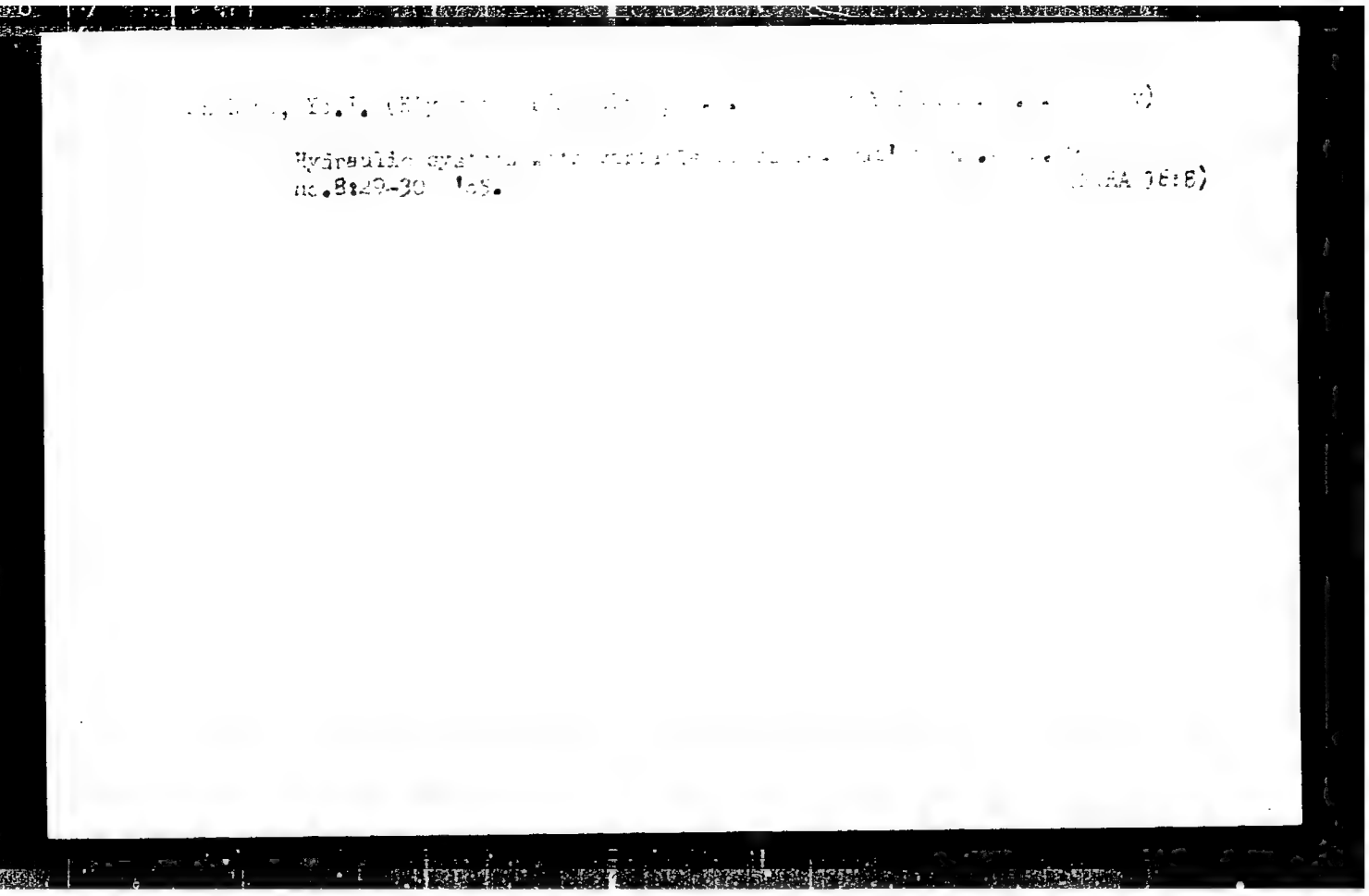

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KUCHUK-YATSENKO, S.I., [illegible]

Portable machine for the welding of rails on the track. Avtom. svar. 18 no.4:59-61 Ap '65. (MIRA 18:6)

1. Institut elektrosvarki imeni Patona AN UkrSSR (for Kuchuk-Yatsenko, Soladovnikov). 2. Proyektno-konstruktorskoye byuro putevykh kombaynov Tsentral'nogo nauchno-issledovatel'skogo instituta [illegible] putey soobshcheniya (for Kozlov).

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

ACC NR: AP6021008 (A) SOURCE CODE: UR/0125/66/000/006/0064/0066

AUTHOR: Rabinovich, A. Ya.; Solodovnikov, S. A.; Chekedov, O. P. 40 B

ORG: [Rabinovich] All-Union Scientific Research Institute of Transport Construction (Vsesoyuznyy nauchno-issledovatel'skiy institut transportnogo stroitel'stva); [Solodovnikov, Chekedov] Institute of Electric Welding im. Ye. O. Paton, AN UkrSSR (Institut elektrosvarki im. Ye. O. Patona AN UkrSSR)

TITLE: Welding of continuous rails directly on the railroad track 16

SOURCE: Avtomaticheskaya svarka, no. 6, 1966, 64-66

TOPIC TAGS: railway track, railway construction, welding technology, butt welding

ABSTRACT: Under the aegis of both institutes named above, a special mobile rail welding installation (welding train) (Fig. 1) has been developed for the on-the-spot welding of continuous rails on railroad tracks. The train consists of track motor car carrying a crane on which the welding machine is suspended, as well as three cars carrying equipment for remote control of the welding machine, a diesel generator, and portable accessories. R-50 type continuous rails of various length (250-800 m) are thus welded together from rail segments of

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a fixed length (25 m). The welding process consisted of a series of operations, each handled by a separate team of workers. All the operations are based on the continuous-flow principle so that all the workers are continually kept occupied (Fig. 2). The first team prepares the rails for welding by removing all fasteners and cleaning and properly aligning the contacting

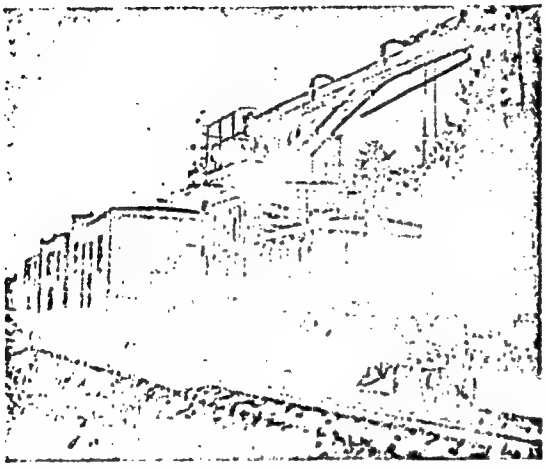

Fig. 1. Mobile rail-welding installation for on-track welding of continuous rails

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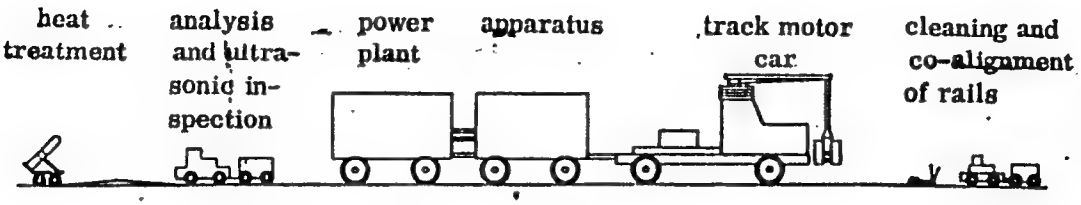

Fig. 2. Flowsheet of on-track welding

surfaces. After this, the welding train approaches the prepared pair of contacting rails and the machine proceeds with their butt-welding and the attendant trimming of the hot welds by means of pneumatic chipping chisels. After the welding and trimming are completed, the train advances toward the next pair of contacting rails, which by then is prepared for welding, while another team of workers is carrying out the normalizing of the preceding pair of rails at the underside of the contacting surfaces. The final operation involves grinding of the rail surfaces with the aid of a special rough-grinding machine, on jacking up the rails, and, later,

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ACC NR: AP6021008 O

permanent attachment of rails to the trackbed by a special brigade of workers. The quality of the butt joints is checked by analyzing each day a sample joint (fracture and bend tests in a hydraulic press, ultrasonic inspection). On-track welding of this kind is definitely more economical than stationary welding, since it eliminates the need to build stationary rail-welding enterprises costing 400,000 to 800,000 rubles each, and thus it also eliminates the need for a special train (consisting of 78 two-axle flatcars) for carrying 800-meter continuous rails from the welding site to the rail-laying site, and moreover then a high and stable quality of welding of the rail butt joints is assured. An average welding train of this kind can process 70 km of track in a single year. Orig. art. has: 2 figures and 2 tables.

SUB CODE: 13,11/ SUBM DATE: 13Dec65/ ORIG REF: 003

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, S.I.

Fertility of Anopheles sacharovi and Anopheles superpictus females. Med.paraz. i paraz.bol. 25 no.3:272 Jl-S '56. (MLRA 9:10)
(MOSQUITOES)

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

5(4)

AUTHORS: Miller, V. B., Neyman, M. B., Solodovnikov, S. P.

SOV/62-59-2-9/40

TITLE: Investigation of the Reaction of Isotopic Exchange Between Methyl Iodide and Iodine (Issledovaniye reaktsii izotopnogo obmena yodistogo metila s yodom)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 2, pp 247-250 (USSR)

ABSTRACT: In the present paper the isotopic exchange between CH_3J and J_2 was investigated in absence of solvents at 30 and 45°. The irradiation of the reaction mixture was carried out by means of a 2 SVDSh-250-3 quartz lamp (Fig 1). The experimental results are given in the table. As it can be seen the exchange rates in the dark and on light exposure are in accordance within error limits. This indicates that the higher concentration of iodine atoms in the volume due to irradiation does not affect the rate of the isotopic exchange. It might therefore be assumed that the exchange reaction in the volume does not take place over iodine atoms. The addition of oxygen does not influence the rate of the isotopic

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exchange. This suggests that in the volume no radical chain reaction takes place as it is the case in solutions where the disappearance of alkyl radicals in the oxygen reduces the rate of the isotopic exchange. The dependence of the reaction rate on the pressure of the components is shown in figure 2. Accordingly, the reaction rate depends up to 0.25 mm linearly on the pressure of iodine. At higher pressure it remains practically constant. This is apparently in connection with the fact that the reaction is proceeding on the surface in this case. At a pressure over 0.25mm a saturation of the surface occurs whereby an increase in pressure does not cause any considerable change in the reaction rate. There are 2 figures, 1 table, and 6 references, 1 of which is Soviet.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences, USSR)

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(7), 5 (4)

AUTHORS: Bubnov, N. N., Soroki[illegible] V. A., Solodovnikov, S. P., Shtarikin, V. M. SOV/48-23-10-35/39

TITLE: Investigation of the Dibenzene-chrome Derivatives by the Method of Paramagnetic Electron Resonance

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 10, pp 1263 - 1264 (USSR)

ABSTRACT: In earlier papers (Refs 1-3) it has already been shown that in highly diluted dibenzene chrome solutions the interaction between the unpaired electron and the protons of the benzene rings, which are in direct connection with the metal (chrome-) atom, manifest themselves by a distinct hyperfine structure of the spectrum of paramagnetic electron resonance. It has already been shown that the introduction of a substituent into the benzene ring influences neither the g-factor of the compound nor the amount of the hyperfine splitting (3.6 ± 0.5 Gs). It was further found that the dissolving temperature, the nature of the solvent or that of the substituent introduced into the benzene ring influences the width of the hyperfine structure component. Further investigations concerned the spin density distribution of the unpaired electron in the molecule, the

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hyperfine splitting, as well as the width of the hyperfine structure component. In this connection, several details, which were obtained from references 1-8 are briefly discussed. Further investigations concerning hyperfine splitting were carried out with the cation of dibenzene chrome with cyclohexyl substituents in both rings. It was found that at low temperatures of the solution of this compound an additional triplet splitting (1 ± 0.5 Gs) of each hyperfine structure component occurs. It is caused by the interaction of the unpaired electron with two protons of a cyclohexyl substituent. An investigation of the influence exerted by various factors on the width of the hyperfine structure component gave the following result: A considerable dilution of the solution with a reduction of temperature leads to a monotonic improvement of the spectral resolving power, i.e. the width of the hyperfine structure component decreases. In some solvents (e.g. alcohols) an anomalous temperature dependence of the spectral resolving power is found; this might be explained by a complex formation between the dibenzene chrome cations and the molecules of the

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Investigation of the Dibenzene-chrome Derivatives by the Method of Paramagnetic Electron Resonance

SOV/48-23-10-35/39

solvent. There are 8 references, 5 of which are Soviet.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences, USSR). Institut khimii pri Gor'kovskom gos. universitete (Institute of Chemistry at Gor'kiy State University)

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MILLER, V.B.; NEYMAN, M.B.; SOLODOVNIKOV, S.P.

Use of the intermittent illumination method in studying the isotope exchange between CH_2I_2 and I_2 [with summary in English]. Zhur.fiz. khim. 33 no.2:457-462 F '59. (MIRA 12:4)

1. AN SSSR, Institut khimicheskoy fiziki, Moskva.
(Iodine--Isotopes)

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5.3100

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67923

SOV/20-129-5-33/64

AUTHORS: Voyevodskiy, V. V., Corresponding Member, AS USSR, Solodovnikov, S. P., Chibrikin, V. M.

TITLE: Investigation of the Spectra of the Electron Paramagnetic Resonance (e.p.r) of the Negative Ions of Some Aromatic and Heterocyclic Compounds

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 5, pp 1082-1084 (USSR)

ABSTRACT: The purpose of this paper was to investigate the electron mobility along the systems of conjugate double bonds and saturated bonds by means of the e.p.r.-spectra. The authors investigated the e.p.r.-spectra of some benzene derivatives. The ion radicals were produced by the reaction of the compounds dissolved in 1,2-dimethoxyethane with metallic potassium. Low temperatures were applied for very unstable ions (down to -70°). The e.p.r.-spectra of the following benzene derivatives were discussed: cumene (Fig 1), cyclohexyl benzene, tert. isobutyl benzene, toluene, ethyl benzene. The spectrum consisted of 5 lines with hyperfine structure and binomial intensity distribution. The observed 5 lines were explained by the inter-

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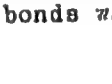
Investigation of the Spectra of the Electron Paramagnetic Resonance (e.p.r.) of the Negative Ions of Some Aromatic and Heterocyclic Compounds

action of the unpaired electron with 4 equivalent H-atoms. In the toluene anion (Fig 2) each of the 5 lines is separated into 8 components due to the interaction between the unpaired electron with 3 α-protons and the proton in p-position. In the investigation of the spectra of o-, m-, and p-xylene more detailed results were obtained than had been given in reference 4. The measurement results and the calculated spin densities of the unpaired electron are summarized in table 1. To investigate the transmission of an electron along the chain of the conjugate or saturated bonds the e.p.r.-spectra of the anions of stilbene, azoxybenzene, and dibenzyl were investigated (Fig 3). In stilbene the possibility of a delocalization of the electron along the benzene ring and along the chain of the conjugate double bonds was proved. The spectrum of azoxybenzene



showed that the replacement of the bridge -C=C- by -N=N- does not reduce the mobility of the electron over the entire molecule. Also in dibenzyl the electron does not remain localized to one

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67923

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Investigation of the Spectra of the Electron Paramagnetic Resonance (e.p.r.) of the Negative Ions of Some Aromatic and Heterocyclic Compounds

ring but changes between the two rings with a frequency of the order of magnitude 10^{-7} - 10^{-8} cm^{-1}. To check the influence of the heteroatoms on the spin density the e.p.r.-spectra of the pyridine and quinoline anions were investigated. From the pyridine spectrum it is concluded that a spin density differing from zero exists in the N-atom and in the α-, β- and γ-C-atoms where the α-, β- and γ-proton are not equivalent. There are 3 figures, 1 table, and 4 references.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences, USSR)

SUBMITTED: August 31, 1959

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68329

SOV/51-8-1-36/40

24.3400

AUTHORS: Vetchinkin, S.I., Solodovnikov, S.P. and Chibrikin, V.M.

TITLE: Distribution of Spin Density in the Chromium Dibenzene Cation

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 1, pp 137-140 (USSR)

ABSTRACT: Chromium dibenzene is a representative of a new type of compounds known as sandwich type compounds. In these compounds the metal atom is not bound to a single carbon atom but to the whole π system of an aromatic hydrocarbon (Refs 1, 2). The present paper deals with distribution of the spin density in the chromium dibenzene cation. The spin density was found from the hyperfine structure (h.f.s.) from electron paramagnetic resonance (e.p.r.) spectra of strongly diluted solutions of the chromium dibenzene cation and solutions of chromium dibenzene cations with isopropyl and cyclohexyl substituents in both benzene rings. Fig 1 shows the e.p.r. spectrum of the chromium dibenzene cation obtained in an acetone solution at -70°C. From the ratio of the h.f.s. intensities and the constancy of the hyperfine splitting (3.6 ± 0.5 Oe) it follows that the unpaired electron interacts with protons of both benzene rings; all twelve protons in these rings act in the same way. Voyevodskiy, Molin and Chibrikin (Ref 7) found that introduction of a hydrocarbon substituent did not alter the magnitude

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[illegible] between
[illegible] all the e.p.r.
[illegible] with a spectrometer
[illegible] and Chestnut (Ref 11) suggested
[illegible] in hyperfine splitting of the proton of
that this splitting is proportional to the
one P_z-orbit of the carbon atom in the
first approximation [illegible] coefficient of proportionality Q, between
the hyperfine splitting and the spin density is constant for all aromatic

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

Solodovnikov, S.P.

S/020/60/133/03/12/013
B004/B056 82276

5.3831

AUTHORS: Yakovleva, Ye. A., Petrov, E. S., Solodovnikov, S. P., Voyevodskiy, V. V., Corresponding Member AS USSR, Shatenshteyn, A. I.

TITLE: The Influence of Metal and Solvent Upon the Formation of Aromatic Anion Radicals as Initiators of Polymerization

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 3, pp. 645 - 648

TEXT: In the introduction, the authors give a survey of publications concerning investigations of anion radicals (AR) formed by the transition of an electron from alkali metal to an organic molecule. They then describe their own investigations of the formation of the AR of benzene and toluene. The following solvents were used: 1,2-dimethoxyethane (DME), 1,2-methoxy-ethoxy-ethane (MEE), 1,2-diethoxyethane (DEE), tetrahydrofurane (THF), and 1,3-dioxane (DO). The AR were detected by means of electron paramagnetic resonance. The frozen solvent with the aromatic compound was placed in an evacuated ampoule, on the walls of which potassium

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had precipitated. Experiments carried out with benzene (0.4 mole in 1 l of solution at -30°C) with an addition of K and DME produced an AR concentration that was 4 to 5 times higher than with DEE. With Na and DEE the AR concentration was lower by at least 2 orders of magnitude. Parallel experiments carried out with Li and Na in DEE at -70°C gave a considerably higher AR concentration for Li. Experiments with toluene supplied the data given in Table 1. The relative concentration of AR was determined, the AR concentration in DME being set equal to 100. The experimental results led to the following conclusions: 1) Benzene forms AR with Li, Na, and K. Potassium-anion radicals formed in all solvents used; 2) substitution of the methyl group of ether by the ethyl group decreased the stability of AR as a result of steric hindrance. Stability decreases in the following order: DME, MEE, DEE. 3) The sodium compound of aromatic hydrocarbon does not form so easily as the K- and Li-compounds. - The initiation of the polymerization of styrene was investigated by means of benzene potassium in DME, MEE, and DEE. The electron paramagnetic resonance spectrum of these solutions showed a narrow singlet (Fig. 1). In the initiation of the polymerization by means of a solution of K in DME without benzene

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SOIODOVNIKOV, S.P.

Investigating the negative ions of some aromatic compounds by means of electron paramagnetic resonance. Zhur.strukt.khim. 2 no.3: 282-292 My-Je '61. (MIRA 15:1)

1. Institut khimicheskoy fiziki AN SSSR.
(Aromatic compounds--Spectra)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, S.P.; CHERNYSHEV, Ye.A.

Electron paramagnetic resonance spectra of anions of elements-substituted aromatic compounds. Part 1: Electron paramagnetic resonance spectra of anions of trialkylsilylbenzenes and trialkylsilylalkylbenzenes. Zhur.strukt.khim. 3 no.6:665-668 '62. (MIRA 15:12)

1. Institut khimicheskoy fiziki AN SSSR i Institut organicheskoy khimii AN SSSR.
(Silicon organic compounds—Spectra) (Benzene)

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

S/051/62/012/001/005/020
E075/E436

AUTHORS: Solodovnikov, S.P., Voyevodskiy, V.V.

TITLE: Application of the analysis of line form in electronic paramagnetic resonance for the investigation of density distribution of unpaired electron in the anions of some polymers

PERIODICAL: Optika i spektroskopiya, v.12, no.1, 1962, 32-36

TEXT: The authors investigated densities of delocalized unpaired electrons in a number of polyphenyl molecules. The polymer molecules were converted into anions by interacting of aromatic hydrocarbons with metallic calcium dissolved in 1,2-dimethoxyethane. Spectra of e.p.r. were taken at room temperature, the concentration of the paramagnetic particles being about 10^{-4} mole. For the different polymeric anions examined, lines with a diffuse hyperfine structure were obtained alongside with the spectra containing resolved hyperfine structure. A direct method of the evaluation of degree of delocalization of unpaired electron was used for the interpretation of the experimental results. The line width observed experimentally is expressed by

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Application of the analysis ...

$$\Delta H_{exper} = \sqrt{(\Delta H_b)^2 + (\Delta H_i)^2} \qquad (4)$$

and is determined by the width ΔH_b of unresolved hyperfine structure or by the width ΔH_i of individual component. For most aromatic radicals ΔH_i is not greater than 1 to 2 Oe. In that case, ΔH_b is given by

$$\Delta H_b = \frac{l}{\sqrt{2(n-1)}} \qquad (2)$$

where n is the number of protons interacting with unpaired electron and l a factor depending on the length of the spectrum. The results of the measurements of component number and line width and also determinations of the number of units in which the delocalizations are small in relation to the molecular dimensions. Examination of anions I and II in the table shows that the presence of one conjugated system does not always give high frequencies of delocalization in a molecule. The frequency of delocalization of an unpaired electron in a polymer molecule, which is not in

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, S. P.

Dissertation defended for the degree of Candidate of Chemical Sciences at the Instititue of Elemento-organic Compounds in 1962:

"Investigation of Aromatic Anions of Radicals Through Electronic Paramagnetic Resonance."

Vest. Akad. Nauk SSSR. No. 4, Moscow, 1963, pages 119-145

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, Stanislav Panteleymonovich; VOYEVODSKIY, V.V., otv. red.; TARASENKO, V.M., red.izd-va; GUS'KOVA, O.M., tekhn. red.

[Signals from the microcosm; magnetic resonance] Signaly iz mikromira; magnitnyi rezonans. Moskva, Izd-vo AN SSSR. 1963. 84 p. (MIRA 17:2)

1. Chlen-korrespondent AN SSSR (for Voyevodskiy).

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

ACCESSION NR: AR4025720 S/0081/64/000/002/B024/B024

SOURCE: RZh. Khimiya, Abs. 2B156

AUTHOR: Solodovnikov, S. P.

TITLE: The investigation of aromatic anion-radicals by the method of electron paramagnetic resonance

CITED SOURCE: Sb. probl. spektroskopii, T. 2. M., AN SSSR, 1963, 101-103 Fiz.

TOPIC TAGS: aromatic radical, anion, anion radical, electron paramagnetic resonance, spectrography, unpaired electron

TRANSLATION: According to the EPR spectra, it was established that in anion-radicals of the alkyl derivatives of benzene, the unpaired electron density is localized principally to the carbon atoms in the ortho and meta positions. EPR spectra of the anions $C_6H_5 - (CH_2)_n - C_6H_5$, where n=1 and 2, correspond to relocation of the unpaired electron on two phenyl rings, while where $n > 2$ they correspond to localization of the unpaired electron in one phenyl ring. The equilibrium between the anions and the original hydrocarbons was investigated for benzene, toluene and p-xylene. S. Solodovnikova

DATE ACQ: 03Mar64 SUB CODE: OC ENCL: 00

Card 1/1

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

BLYUMENFEL'D, L.A.; VOYEVODSKIY, V.V.; SOLODOVNIKOV, S.P.

Nature of ion radicals formed during interaction of potassium and sodium with some aromatic hydrocarbons. Izv.AN SSSR. Ser.khim. no.1:158-160 Ja '64. (MIRA 17:4)

1. Institut khimicheskoy fiziki AN SSSR.

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ACCESSION NR: AT5006091 S/0000/64/000/000/0196/0212

21
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B+1

AUTHOR: Solodovnikov, S. P.; Chernyshev, Ye. A.

TITLE: ESR spectra of anions of hetero-substituted aromatic compounds of group IV

SOURCE: Soveshchaniye po fizicheskim metodam issledovaniya organicheskikh soyedineniy i khimicheskikh protsessov, Frunze, 1962. Trudy. Frunze, Izd-vo Ilim, 1964, 196-212

TOPIC TAGS: beteroorganic compound, electron structure, electron paramagnetic resonance, benzene derivative, organosilicon compound, organotin compound, organogermanium compound, unpaired electron

ABSTRACT: The ESR method was applied to the study of the electron structure of hetero-substituted aromatic compounds of group IV, including those with silicon, tin, and germanium. After discussing certain chemical characteristics of aromatic organosilicon compounds and the electron structure of the anions of benzene and alkyl derivatives of benzene, the authors describe and illustrate the ESR spectra of anions of aromatic organosilicon compounds which they prepared. The results of the ESR spectra of silyl-substituted and silylalkyl-substituted benzene derivatives are tabulated, and conclusions are drawn with regard to the density of the unpaired

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electron for various positions in the benzene ring. This is followed by a similar discussion of the ESR spectra of anions of tin- and germanium-substituted benzene derivatives. The authors conclude that the experimental data accumulated thus far are insufficient for a definitive solution of the problem of the distribution of the unpaired electron in anions of tin and germanium derivatives of benzene. Orig. art. has: 10 figures, 1 table and 24 formulas.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Chemical physics institute, AN SSSR)

SUBMITTED: 19Jun64 ENCL: 00 SUB CODE: OC,GC

NO REF SOV: 002 OTHER: 012

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APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

KABACHNIK, M.I.; VOYEVODSKIY, V.V.; MASTRYUKOVA, T.A.; SOLODNIKOV, S.P.; MELENT'YEVA, T.A.

Conjugation in the systems involving a tetrahedral atom. Electron paramagnetic resonance spectra of some organophosphorus compounds. Zhur. ob. khim. 34 no.10:3234-3240 O '64. (MIRA 17:11)

1. Institut elementoorganicheskikh soyedineniy AN SSSR i Institut khimicheskoy fiziki AN SSSR.

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

TYUDESH, F.; KENDE, I.; BEREZHNYKH, T.; SOLODOVNIKOV, S.P.; VOYEVODSKIY, V.V.

Radicals as intermediate products in the inhibition of radical polymerization reaction. Kin. i kat. 6 no.2:203-211 Mr-Ap '65. (MIRA 18:7)

1. TSentral'nyy nauchno-issledovatel'skiy institut khimii AN Vengerskoy Narodnoy Respubliki i Institut khimicheskoy fiziki AN SSSR.

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

KREYFETS, V.Z., kand.tekhn.nauk; ARST, G.A., inzh.; IVANOV, K.K., inzh.; SOLODOVNIKOV, V.A., inzh.

Devices for the control of underwater hydraulic engineering operations. Transp.stroi. 15 no.10:52-53 O '65. (MIRA 18:12)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, V. B.

Mbr., Lab. Genetics and Exptl. Zoology, Leningrad State Univ., -1939-. Mor., Biological Inst., Leningrad Order Lenin State Univ., im. M. V. Lomonosov, -c1948-. "Roentgenomorphoses in Drosophila Melanogaster as Dependent on Temperature of Development," Dok. AN., 23, No.8, 1939; "Ontogenetic Adaptation of Larvae of the Oak-Moth, Antherea Perny, under Varying Feeding Conditions," ibid, 53, No. 7, 1946; "The Natural Morphogenesis of Drosophila Melanogaster in Its Natural Habitats," ibid., 56, No. 3, 1947; 35T47 "Study of the Sensoty Periods in Development of Normal Drosophila Melanogaster Phenotypes," ibid., 58, No. 2, 1947; "Behavior Changes of the Caterpillars of the Chinese Oak Silkworm Antheraea Pernyi on the Feeding Gradient," ibid., 60, No. 2, 1948.

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APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, V. P.

USSR/ Scientists - Economics

Card 1/1 Pub. 124 - 16/32

Authors : Solodovnikov, V. P., Cand. of Econ. Sc.

Title : At the Institute of Economics

Periodical : Vest. AN SSSR 25/6, 84-85, June 1955

Abstract : Lecture was presented by Polish economist, Prof. B. Mints, on the major problems involved in the economical development of post-war Poland.

Institution : .....

Submitted : .....

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, V. G.

USSR/Scientific Organization

Card 1/1 Pub. 124 - 21/30

Authors : Dadykin, V. P.; Gilyarov, M. S.; Demchin, N. N.; and Solodovnikov, V. G.

Title : At the institutions of the Acad. of Sc., USSR

Periodical : Vest. AN SSSR 25/7, 105-114, Jul 1955

Abstract : General reports are presented by various institutions of the Acad. of Sc., USSR describing their activities for a certain period of time. The report by the A. A. Baykov Institute of Metallurgy explained the technical and economical advantages of adopting the vacuum casting method in metallurgy especially in ferrous metallurgy. It is pointed out that the adoption of the vacuum casting method for the manufacture of transformer and Bessemer steel will increase the quality of the products.

Institution : .....

Submitted : .....

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

30-2-16/49

AUTHOR: Solodovnikov, V. G. , Candidate of Economic Sciences

TITLE: International Conference of Economists in Brazil (Mezhdunarodnaya konferentsiya ekonomistov v Brazilii)

PERIODICAL: Vestnik Akademii Nauk SSSR, 1958, Nr 2, pp 71-74(USSR)

ABSTRACT: As the Soviet Union had not yet been a member of the International Economic Association, founded in 1949 by the initiative of the UNESCO, it was only represented by an observer and did not take part actively in this conference. The conference took place in Rio de Janeiro. 28 delegates and two observers from 8 countries participated in it: Brazil, British-West-India, Mexico, India, France, Chile, USA and USSR. The conference was held under the title "Capital and Foreign Trade in the Theory of the Economic Development as Illustrated by the Example of the Countries of Latin America". Altogether 15 reports were given. Representatives of Slavic countries did not participate. At the end the Soviet observer remarked on the differences in the opinions of the representatives of underdeveloped countries on one side and the USA

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30-2-16/49

International Conference of Economists in Brazil

on the other side. He regards it as an important task of the USSR to provide an economic aid to backward countries.

AVAILABLE: Library of Congress

1. Conferences-International Economists-Brazil 2. Economic conditions-Latin America

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

KOLLONTAY, Vladimir Mikhaylovich; SOLODOVNIKOV, V.G., kand.ekonom.nauk, otv.red.; KUCHINSKIY, N.N., red.izd-va; MAKOGONOV, I.A., tekhn.red.

[Foreign investments in economically underdeveloped countries] Inostrannye investitsii v ekonomicheski slaborazvitykh stranakh. Moskva, Izd-vo Akad.nauk SSSR, 1960. 273 p. (MIRA 14:2)

(Underdeveloped areas) (Investments, Foreign)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

POLYAK, A.A.; MARTYSHEVA, G.A.; SOLODOVNIKOV, V.G.; BRAGINA, Ye.A.; KONDRAT'YEV, V.A.; UL'RIKH, O.D.; ZABLOTSKAYA, A.I.; SAVEL'YEV, N.A.; POKATAYEVA, T.S.; AVARIN, V.Ya., otv.red.; PANTELEYEV, V.I., red.izd-va; ASTAF'YEVA, G.A., tekhn.red.

[Industrialization problems of the sovereign underdeveloped countries of Asia (India, Indonesia and Burma)] Problemy industrializatsii suverennykh slaborazvitykh stran Azii (Indiia, Indoneziia, Birma). Moskva, Izd-vo Akad.nauk SSSR, 1960. 436 p. (MIRA 14:2)

1. Akademiya nauk SSSR. Institut mirovoy ekonomiki i mezhdunarodnykh otnosheniy. 2. Sektor stran Yugo-Vostochnoy Azii i Dal'nego Vostoka Instituta mirovoy ekonomiki i mezhdunarodnykh otnosheniy Akademii nauk SSSR (for all except Avarin, Panteleyev, Astaf'yeva).
(Asia, Southeastern--Industrialization)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, Vasiliy Grigor'yevich; KOKOSHKO, A.G., red.; NAUMOV, K.M., tekhn. red.

[Bourgeois theories and some problems concerning the economic development of underdeveloped contries] Burzhuaznye teorii i problemy ekonomicheskogo razvitiia slaborazvitykh stran. Moskva, Izd-vo VPSh i AON pri TsK KPSS, 1961. 85 p. (MIRA 14:11)
(Underdeveloped areas) (Industrialization)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, V.G., glav. red.; KHRAMELASHVILI, V.N., zam. glav. red.; GOLANSKIY, M.M., red.; DIKANSKIY, M.G., red.; KAMUSHER, K.G., red.; LITVIN, Z.V., red.; FITUNI, L.A., red.; CHERNYSHEV, P.M., red.; SHAPIRO, A.I., red.; SHEVCHENKO, G.N., tekhn. red.; GUSEVA, A.P., tekhn. red.

[International economic organizations; handbook] Mezhdunarodnye ekonomicheskie organizatsii; spravochnik. 2., dop. izd. Moskva, Izd-vo Akad. nauk SSSR, 1962. 1108 p. (MIRA 15:2)

1. Akademiya nauk SSSR. Institut mirovoy ekonomiki i mezhdunarodnykh otnosheniy.
(International agencies--Handbooks, manuals, etc.)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, V.V.

Institute of Automatics and Telemechanics, Academy of Sciences (1945)

"Concerning an Application of Operational Calculus to Dunamic Systems with Variable Parameters," No.12, 1945, Iz. Ak. Nark. SSSR. Otdel, Tekh. Nauk

[redacted]-52059019

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

Solodovnikov, V. V.

Solodovnikov, V. V. On an approximate method of investigation of the dynamics of a regulating system or a following system. Bull. Acad. Sci. URSS. Cl. Sci. Tech. [Izvestia Akad. Nauk SSSR] 1945, 1179–1202 (1945). (Russian)

In the author's own words, "this paper makes no pretense at mathematical rigor but merely indicates a possible way of developing an approximate method for a qualitative study of differential equations." The author considers a transient process governed by an equation of the form $a_n\delta^{(n)}(t)+\cdots+a_1\delta'(t)+a_0\delta(t)=f(t)$, a = constant, whose solutions may be represented in the form

$$\delta(t)=(2/\pi)\int_0^\infty \omega^{-1}P(\omega)\sin\omega t\,dt,$$

where the "frequency characteristic"

$$P(\omega)=\Re\left\{i\omega\int_0^\infty e^{-i\omega t}\delta(t)\,dt\right\}$$

can be computed from the differential equation and the initial conditions. Using known theorems as well as plausibility considetations he formulates rules of thumb which permit him to predict whether or not the function $\delta(t)$ corresponding to a given function $P(\omega)$ satisfies the following conditions: (I) $\lim_{t\to\infty}\delta(t)=\delta_0$ and $\int_0^\infty|\delta(t)-\delta_0|\,dt<\infty$, (II) $|\delta(t)|\leq\delta_m$ for $t>0$, (III) for $t\geq t_0$, $|\delta(t)-\delta_0|\leq\Delta$, (IV) $\int_0^{t_0}(1+\delta'(t))^{\frac{1}{2}}dt\leq l_0$, where δ_0, δ_m, Δ, t_0 and l_0 are given numbers. The last condition serves to limit the number of changes in sign of $\delta(t)-\delta_0$.

The method is illustrated by several numerical examples. It is shown how similar considerations may be used in order to replace a complicated differential equation by a simpler one without causing a significant change in the solution.

L. Bers (Syracuse, N. Y.).

Source: [illegible] Mathematical Reviews, [illegible]

Inst. Automatics + Telemechanics AS USSR

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, V. V.

"The Frequency-response mehhod in the theory of regulation (a survey) (in Russian), Avtomatika i Telemekhanika, 8, 65-88, 1947.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

BOLDYREV, V. V.

USSR/Drives, Electric
Mathematics
Controls, Electric

Apr 1947

"Investigation of the Dynamics of Electric Drives, and a System of Automatic Regulation by Means of Frequency Characteristics," 7 pp

"Elektrichestvo" Vol LXVII, No 4

A method of using amplitude-phase characteristics for a full characteristic of transitional processes in regulation systems without calculating the roots of the characteristic equations. The method is illustrated by a description of the transitional process in the electric drive for stabilizing the taphole-stopping machine of a blast furnace tank.

6T51

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, V. V.

"Certain Methods of Studying Autoregulation Systems," Dissertation, VEI, 1940

Avtomatika i Telemekhanika, No. 5, 1948

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, V. V.

"Criteria of the Asymptotic Stability of Nyquist." Zapiski Seminara po teorii ustovchivosti dvizheniya, Moscow, Izdaniye Akademii, 1948, No. 3, pp.33-39 bibliography, 3 titles in footnotes (Red Banner Order of Lenin VVIA imeni N. Ye. Zhukovskiy).

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

USSR/Electronics Mar/Apr 1948
Regulators, Electronic
Synchronous Machines

"Application of the Method of Logarithmic Frequency Characteristics to Research on the Stability and to Evaluation of the Quality of Servo and Regulating Systems," V. V. Solodovnikov, Inst of Automatics and Telemech, Acad Sci USSR, 12 pp

"Avtomat i Telemekh" Vol IX, No 2, p 85-103

Application of subject method to servo systems with open circuits to determine the stability and quality, which characterizes the maximum amplitude characteristic of system with closed circuit and the interval for conductance of frequencies. MacColl's method of approximating logarithmic amplitude characteristics was used for calculations on servo systems. Submitted 21 Aug 1947.

PA 64T53

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

PA 13/49T25

USSR/Electronics Jul/Aug 48
Regulators, Electronic
Mathematics, Applied

"Conditions Under Which Excessive Regulation Cannot Exist in Large Quantities," V. V. Solodovnikov, Inst of Automatics and Telemech, Acad Sci USSR, 5½ pp

"Avtomatika i Telemekh" Vol IX, No 4

In previous article (71T6) author formulated conditions which must be satisfied by a generalized real frequency characteristic $X(\omega)$ in order that the regulating process shall be accomplished with-

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USSR/Electronics (Contd) Jul/Aug 48

out overregulation. Subsequent examination has disclosed that these conditions, which were stated without proof, denote, not the absence of overregulation, but that it does not exceed a certain value. A later article will be devoted to establishing criteria for the absence of overregulation. Submitted 20 Mar 1948.

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SOLODOVNIKOV, V. V.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, V.V.

Solodovnikov, V. V. Criteria for the quality of a regulation. Doklady Akad. Nauk SSSR (N.S.) 60, 977–980 (1948). (Russian)

The author considers the function $f(t)$ represented by the integral

$$(1) \qquad f(t)=\frac{1}{2\pi i}\int_{-i\infty}^{i\infty} s^{-1}J(s)e^{st}ds,$$

where the path of integration is the imaginary axis indented to the right at the origin. This integral represents the solution of a differential equation treated by the author in a previous paper unavailable to the reviewer. From physical considerations the function $f(t)$ is required to satisfy the conditions (2) $0\leqq f(t)\leqq g_1(t)$, $0\leqq t<T_0$, $g_2(t)\leqq f(t)\leqq g_1(t)$, $t\geqq T_0$. Necessary and sufficient conditions on $X(t)$ and $Y(t)$ are given, where $J(it)=X(t)+iY(t)$, that (2) be satisfied.

R. Bellman (Stanford University, Calif.).

Source: Mathematical Reviews, Vol 10, No. 1

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

Solodovnikov, V.V.

Solodovnikov, V. V. Criteria for the absence of over-regulation and criteria for monotonicity. Doklady Akad. Nauk SSSR (N.S.) 62, 599–602 (1948). (Russian)

The physical problem reduces to the mathematical problem of determining $f(s)$ so that $\int_0^\infty f(s) \cos st\, ds > 0$ for $t > 0$. This problem has been treated by Mathias [Math. Z. 16, 103–125 (1923)] and by Boas and Kac [Duke Math. J. 12, 189–206 (1945); these Rev. 6, 265]. The author discusses some simple consequences of the results of these authors.

R. Bellman (Stanford University, Calif.).

Source: Mathematical Reviews, Vol 10 No. 5

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, V.V.

"Frequency Method of Analyzing the Dynamics of Follower and Regulating Systems." Thesis for Degree of Dr. Technical Sci. Sub 19 May 49, Inst. of Automatics and Telemechanics Acad Sci USSR

Summary 82, 18 Dec 52, Dissertations Presented for degrees in Sci and Engineering in Moscow in 1949. From Vechernyaya Maskva, Jan-Dec. 1949

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, V. V.

PA 45/49T29

USSR/Electronics
Servomechanics

Apr 49

"Analysis of the Quality of Tracking Systems According to Their Phase-Amplitude Characteristics," V. V. Solodovnikov, Inst of Automatics and Telemech, Acad Sci USSR, 19 pp

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 4

Starts from certain characteristics of active (real) frequency characteristic of a tracking system, and attempts to show how its dynamic properties may be appraised from magnitude of overregulation and transition time, according to phase-amplitude characteristic of a closed system used to investigate stability. Results obtained may be used not only for analysis, but also for synthesis of tracking systems, since they show how phase-amplitude characteristic of an unsatisfactory system should be corrected to satisfy required quality conditions for a given margin of stability. Submitted by Acad V. S. Kulebakin, 6 Jul 48.

45/49T29

USSR/Electronics (Contd) Apr 49

45/49T29

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

FA 151T22

SOLODOVNIKOV, V. V.

USSR/Engineering - Servomechanisms Sep/Oct 49
Mathematics - Transfer Function

"Application of Trapezoidal Frequency Characteristics to an Analysis of the Nature of Systems of Automatic Regulation," V. V. Solodovnikov, 15 pp

"Avtomat i Telemekh" Vol X, No 5

Discusses relationship between transfer function x(t) and generalized real frequency characteristic R(w), which is the basis of frequency method of analyzing nature of automatic-regulation systems. Discusses approximate method of calculating transfer function x(t), in above relationship, for

151T22

USSR/Engineering - Servomechanisms Sep/Oct 49
(Contd)

given characteristic function R(w) expanded into algebraic sum of trapezoidal frequency characteristics. Demonstrates that this trapezoidal expansion can be used to introduce the concept of typical real frequency characteristics suitable for rapid determination of character of transfer process. Gives practical example, with table, of above method.

151T22

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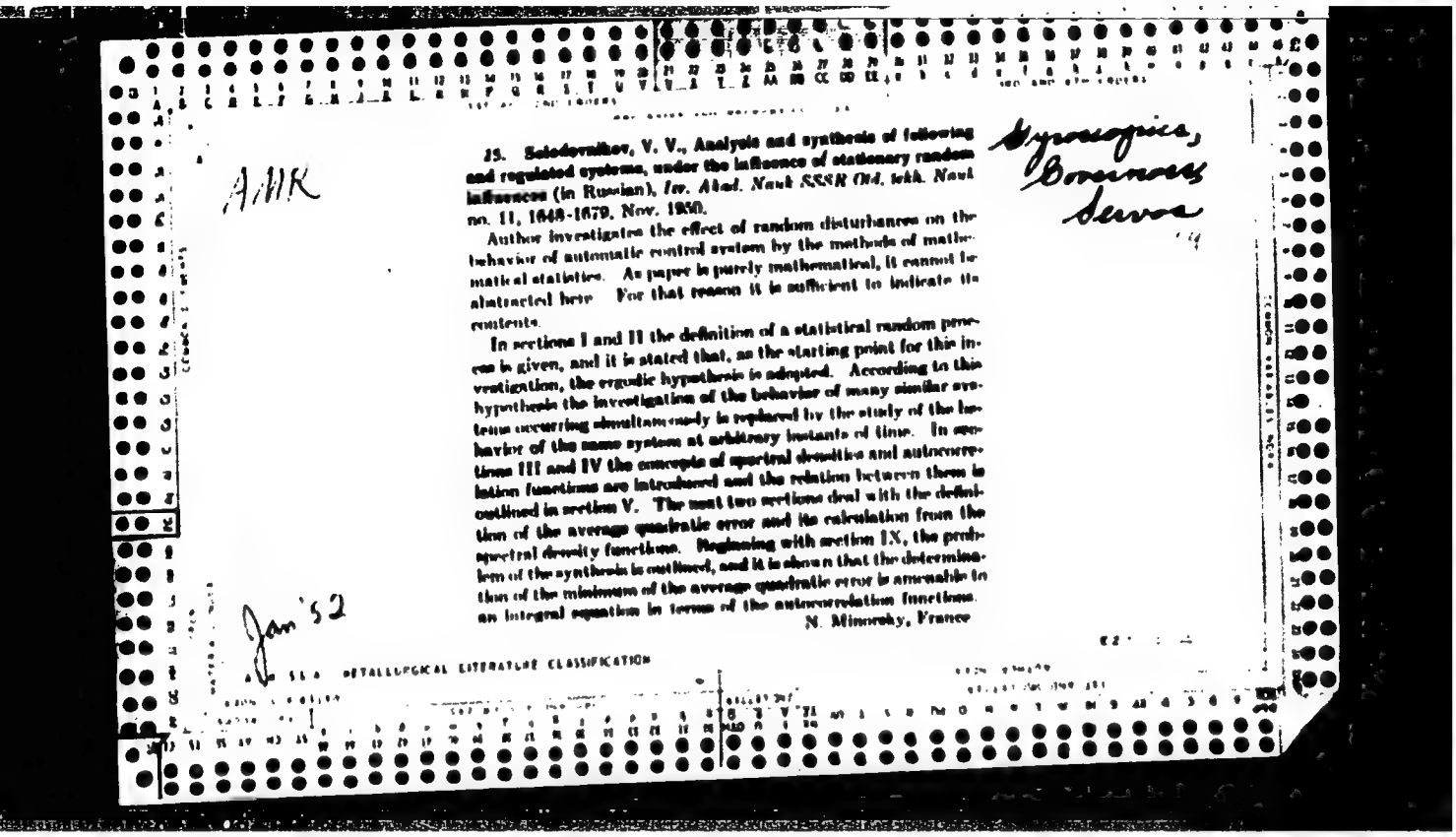

AMR

Gyroscopics, Governors, Servos

15. **Solodovnikov, V. V., Analysis and synthesis of following and regulated systems, under the influence of stationary random influences** (in Russian), *Izv. Akad. Nauk SSSR Otd. tekh. Nauk* no. 11, 1648-1679, Nov. 1950.

Author investigates the effect of random disturbances on the behavior of automatic control system by the methods of mathematical statistics. As paper is purely mathematical, it cannot be abstracted here. For that reason it is sufficient to indicate its contents.

In sections I and II the definition of a statistical random process is given, and it is stated that, as the starting point for this investigation, the ergodic hypothesis is adopted. According to this hypothesis the investigation of the behavior of many similar systems occurring simultaneously is replaced by the study of the behavior of the same system at arbitrary instants of time. In sections III and IV the concepts of spectral densities and autocorrelation functions are introduced and the relation between them is outlined in section V. The next two sections deal with the definition of the average quadratic error and its calculation from the spectral density functions. Beginning with section IX, the problem of the synthesis is outlined, and it is shown that the determination of the minimum of the average quadratic error is amenable to an integral equation in terms of the autocorrelation functions.

N. Minorsky, France

Jan '52

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, V. V.

"Frequency Conditions Governing Monotonicity, and Evaluating the Error in Determing the Transitional Process by Frequency Characteristics"

Avtomatika i Telemakhanika, Vol. XI, No. 1, Jan/Feb 1950, pp 1-78

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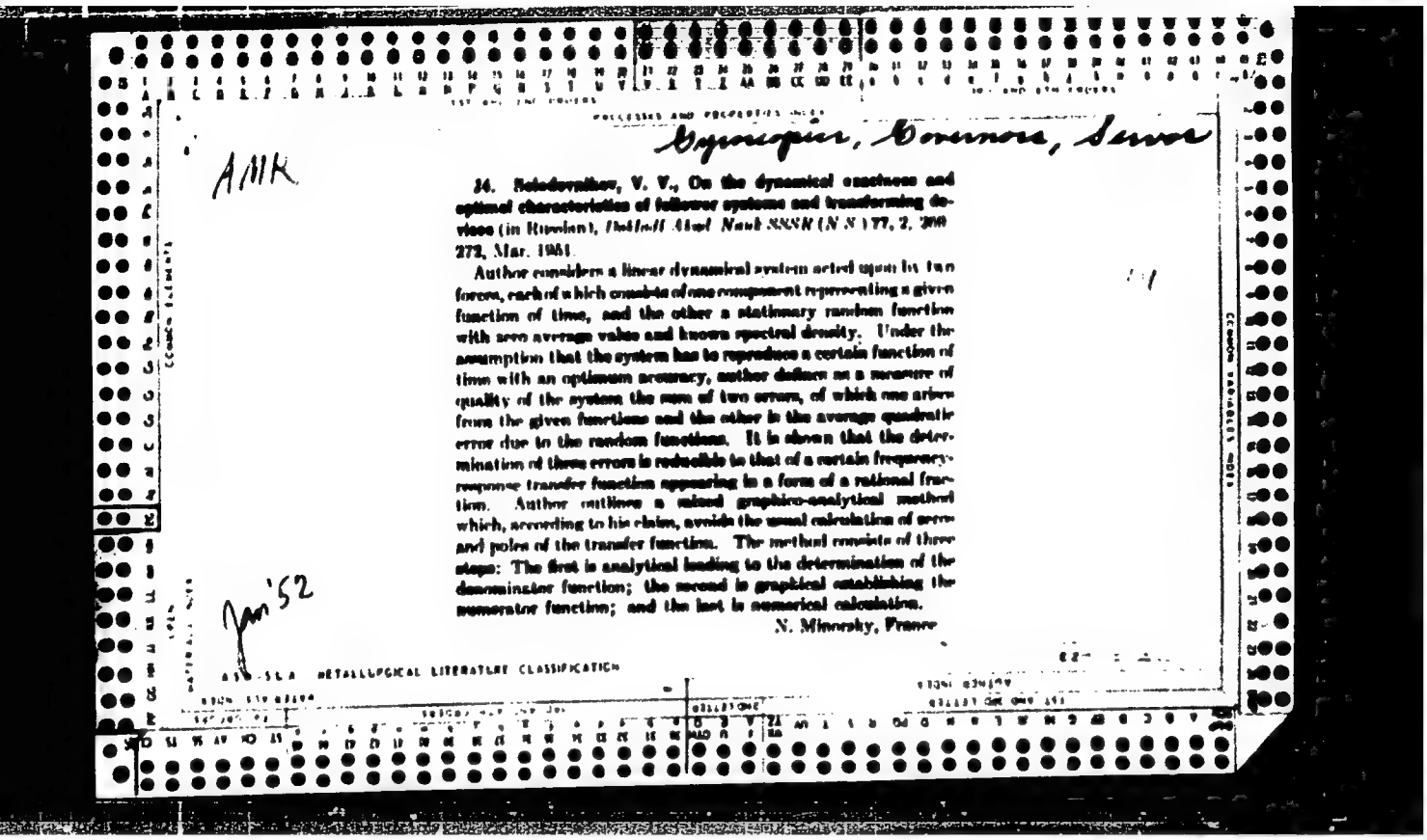

Gyroscopics, Governors, Servos

AMK

14. Solodovnikov, V. V., On the dynamical exactness and optimal characteristics of follower systems and transforming devices (in Russian), *Doklady Akad. Nauk SSSR (N.S.)* 77, 2, 269-272, Mar. 1951.

Author considers a linear dynamical system acted upon by two forces, each of which consists of one component representing a given function of time, and the other a stationary random function with zero average value and known spectral density. Under the assumption that the system has to reproduce a certain function of time with an optimum accuracy, author defines as a measure of quality of the system the sum of two errors, of which one arises from the given functions and the other is the average quadratic error due to the random functions. It is shown that the determination of these errors is reducible to that of a certain frequency-response transfer function appearing in a form of a rational fraction. Author outlines a mixed graphico-analytical method which, according to his claim, avoids the usual calculation of zeros and poles of the transfer function. The method consists of three steps: The first is analytical leading to the determination of the denominator function; the second is graphical establishing the numerator function; and the last is numerical calculation.

N. Minorsky, France

Jan '52

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

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SOLODOVNIKOV, VV

PHASE I Treasure Island Bibliographic Report

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Call No.: AF561413

BOOK

Author: SOLODOVNIKOV, V.V.

Full Title: INTRODUCTION INTO STATISTICAL DYNAMICS OF AUTOMATIC CONTROL SYSTEMS.

Transliterated Title: Vvedenie v statisticheskuyu dinamiku sistem avtomaticheskogo upravleniya

Publishing Data

Originating Agency: None.

Publishing House: State Publishing House of Technical Theoretical Literature.

Date: 1952 No. pp.: 368 No. copies: 10,000

Editorial Staff

Editor: None. Technical Editor: None.

Editor-in-Chief: None. Appraiser: None.

Text Data

Coverage: This book is written for readers familiar with the theory of probability, and with Laplace and Fourier conversions. This knowledge is considered essential for understanding of the general theories on dynamical precision of the follow-up systems, systems of automatic control, and the various reproducing systems, both sound and image, described here. The book is devoted primarily to the mathematical treatment of questions related to the quality of reproduction of signals, representing casual functions of time. The work can be regarded as an attempt to describe more or less systematically subjects whose treatment is usually scattered among various periodical publications. The author considers that the material presented here

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Card 2/2

Call No.: AF561413

Full Title: INTRODUCTION INTO STATISTICAL DYNAMICS OF AUTOMATIC CONTROL SYSTEMS.

Text Data

Coverage: (continued)
is an adequate mathematical means for the solution of such important and complicated problems as the selection of the parameters and characteristics ensuring high precision in the reproduction of signals in the presence of interference. The last portion of the book describes the grapho-analytical method of determination of the optimal frequency characteristics of systems with the spectral densities of the signals and the interferences, given in the form of experimental curves of unknown analytical expressions. Practical computation by the proposed method is simplified with the use of tables of the functions $\frac{\sin x}{x}$, $\frac{\cos x}{x}$ and Laguerre's function given at the end of the book.

Purpose: A book for specialists interested in the quality of reproduced signals, and particularly in follow-up systems and systems of automatic control.

Facilities: None.

No. Russian and Slavic References: 30 given in footnotes.

Available: A.I.D., Library of Congress.

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, V.V.

Letter to the editor. Avtom. i telem. 14 no.2:241-244 Mr-Ap '53. (MLRA 10:3)

(Science and state)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV V. V.

(Solodovnikov V. V.) A discussion of V. V. Solodovnikov's book, "Introduction to the Statistical Dynamics of Automatic Control Systems," at a seminar on the theory of automatic regulation, IAT, 27 May 1953, Avtomatika i telemekhanika, Volume XIV No 4, Pages 471-472.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, V.V. (Moskva)

Synthesis of correctors used in servosystems based on optimum and standard logarithmic frequency characteristics. Avtom. i telem. 14 no.5:531-555 S-O '53. (MLRA 10:3)

(Servomechanisms)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SOLODOVNIKOV, V.V., professor, doktor tekhnicheskikh nauk, redaktor; AYZERMAN, M.A., doktor tekhnicheskikh nauk; BASHKIROV, D.A., kandidat tekhnicheskikh nauk; BROMBERG, P.V., kandidat tekhnicheskikh nauk; VORONOV, A.A., kandidat tekhnicheskikh nauk, dotsent; GOL'DFARB, L.S., doktor tekhnicheskikh nauk, professor; KAZAKEVICH, V.V., doktor tekhnicheskikh nauk; KRASOVSKIY, A.A., kandidat tekhnicheskikh nauk, dotsent; LERNER, A.Ya., kandidat tekhnicheskikh nauk; LETOV, A.M., doktor fiziko-matematicheskikh nauk; professor; MATVEYEV, P.S., inzhener; MIKHAYLOV, F.A., kandidat tekhnicheskikh nauk; PETROV, B.N.; PETROV, V.V., kandidat tekhnicheskikh nauk; POSPELOV, G.S., kandidat tekhnicheskikh nauk, dotsent; TOPCHEYEV, Yu.I., inzhener; ULANOV, G.M., kandidat tekhnicheskikh nauk; KHRAMOY, A.V., kandidat tekhnicheskikh nauk; TSYPKIN, Ya.Z. doktor tekhnicheskikh nauk, professor; LOSSIYEVSKIY, V.L., doktor tekhnicheskikh nauk, professor, retsenzent; TIKHONOV, A.Ya., tekhnicheskiy redaktor

[Fundamentals of automatic control; theory] Osnovy avtomaticheskogo regulirovaniia; teoriia. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1954. 1116 p. (MLRA 8:2)

1. Chlen-korrespondent AN SSSR (for Petrov, B.N.)
(Automatic control)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652220003-0

SUBJECT USSR/MATHEMATICS/Applied Mathematics CARD 1/2 PG - 440
AUTHOR SOLODOVNIKOV V.V. TOPČEEV Ju.I., KRUTIKOVA G.V.
TITLE The frequency method for the construction of transition processes. With an appendix: Tables and monograms. Handbook.
PERIODICAL Moscow: State Publication for technical-theoretical Literature (1955) 195 p.
reviewed 12/1956

For the determination of the transition function by aid of the trapezoidal characteristics the local curve is approximated by trapezoidal parts. Thus the integral representation of the transition function is reduced to a finite sum of certain typical functions $h_{\varkappa}(t)$. These functions are linear combinations of integral sines and can be tabulated. The method permits 1) to attain the transition function even from experimentally obtained frequency images; 2) to reduce the determination of the transition function to a purely mechanic computing process which is very suitable for the practical man. The application of this method was difficult till now: sufficient tables for $h_{\varkappa}(t)$ were missing. This want is now supplied by the present book. It contains four-figure tables of the $h_{\varkappa}(t)$-values for $0 \leq \varkappa \leq 1$ with intervals 0.01 and for $0 \leq t \leq 50$ with intervals 0,2. The comparison with the former threefigure tables of Solodovnikov shows that these latter ones are not exact in the third figures. Besides of the

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Moscow: State Publication for technical-theoretical Literature. (1955) 195 p. CARD 2/2 PG - 440

h tables the book brings tables for the integral sine and numerous auxiliary curves and nomograms for facilitating intermediate calculations. The book starts with a very detailed theoretical representation of the method (p.7-41) and numerous examples of application (p.42-75) which are followed by the tables (p 76-195).

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[Transactions of the Second All-Union Conference on the Theory of Automatic Control. Trudy vtorogo Vsesoiuznogo soveshchaniia po teorii avtomaticheskogo regulirovaniia. Moskva. Vol.2 [Problem of quality of dynamic precision in the theory of automatic control] Problema kachestva i dinamicheskoi tochnosti v teorii avtomaticheskogo regulirovaniia. 1955. 536 p. [Microfilm] (MLRA 9:1)

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SUBJECT USSR/MATHEMATICS/Theory of probability CARD 1/3 PG - 562
AUTHOR SOLODOVNIKOV V.V., MATVEEV P.S.
TITLE Synthesis of the correcting terms of control systems at the influence of disturbances under given claims to the dynamic exactness.
PERIODICAL Avtomat.Telemech. 16, 233-257 (1955)
reviewed 2/1957

On a linear dynamic system with the impulse transition function k(t) there act the entrance signal y(t) and the disturbance n(t). y(t) shall have the form $y(t) = g(t) + m(t)$, where g(t) is a given time function, m(t) is a stationary stochastic process with a given correlation function $R_m(z)$ and spectral density $S_m(\omega)$ respectively. n(t) also is a stationary stochastic process with a given correlation function $R_n(z)$ and spectral density $S_n(\omega)$ respectively. Between the stochastic processes of two kinds there exists no correlation. Generalizing the method of Wiener, L.A.Zadeh and J.R.Ragazzini (J.Appl.Phys. 2, 645-655 (1950)) have computed the optimal impulse transition function k(t) under the assumptions that 1) the expectation value of m(t) equals zero, 2) g(t) is a polynomial of r-th degree, 3) $t \leqq 0$, $t \geqq T$ (T=value of observation) $k(t) \equiv 0$, and the assumption that with that function k(t) the quadratic mean value

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adjoined optimal function of impulse transition (and therewith the transferring function) is already determined. The author proposes to approximate the theoretically optimal transferring function with such one which can easily be realized. This idea is discussed in detail. For certain transferring functions the characteristics of the mentioned correcting term are given in tables and nomograms.- After three concrete examples the author tries to determine the optimal impulse transition function k(t) if the assumptions introduced by him are valid unchanged but k(t) shall not minimize the above expression of ε^2 but the quadratic mean value

$$\lim_{\theta\to\infty} \frac{1}{2\theta} \int_{-\theta}^{\theta} \left\{H(p)m(t) - \int_{0}^{T} \left[m(t-z)+n(t-z)\right] k(z)\, dz\right\}^2 dt ,$$

where H(p) denotes a linear differential operator.

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